Clear Form

Michigan Department of Transportation 5100B (09/06)

CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

Exhibit B

MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)
Michelle O'Neill	890650	78042

DESCRIPTION IF NO JN/CS
Road Design Scoping

MDOT PROJECT MANAGER: Check all items to be included in RFP.

WHITE = REQUIRED
GRAY SHADING = OPTIONAL

Check the appropriate Tier in the box below

CONSULTANT: Provide only checked items below in proposal.

☑ **TIER I ($25,000-$99,999)**	☐ **TIER II ($100,000-$250,000)**	☐ **TIER III (>$250,000)**	
☑	☐	☐	Understanding of Service
☑	☐	☐	*Innovations*
☐	☐	☐	*Safety Program*
N/A	☐	☐	Organization Chart
☑	☐	☐	Qualifications of Team
☑	☐	☐	Past Performance
Not required as part of official RFP	Not required as part of official RFP	☐	Quality Assurance/Quality Control
☑	☐	☐	Location. The percentage of work performed in Michigan will be used on all contracts unless the contract is for on-site inspection, then location should be scored for the on-site inspection.
N/A	N/A	☐	Presentation
N/A	N/A	☐	Technical Proposal (if Presentation is required)
3 pages including cover sheet **(No Resumes)**	7 pages	19 pages	Total maximum pages for RFP **not including key personnel resumes**

REQUEST FOR PROPOSAL

Clear Form

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest "Consultant/Vendor Selection Guidelines for Service Contracts" and "Guideline for Completing a Low Bid Sheet(s)", if a low bid is involved as part of the selection process. **Referenced Guidelines are available on MDOT's website under Doing Business > Requests for Proposals.**

RFP SPECIFIC INFORMATION

☑ BUREAU OF HIGHWAYS ☐ BUREAU OF TRANSPORTATION PLANNING ** ☐ OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

☐ NO ☑ YES DATED 10/1/06 THROUGH 12/31/06

☑ **Prequalifed Services** – See page 4 of the attached Scope of Services for required Prequalification Classifications.

☐ **Non-Prequalifed Services** - If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, if overhead is not audited, is on file with MDOT's Office of Commission Audits. This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed.

☑ **Qualifications Based Selection** – Use Consultant/Vendor Selection Guidelines

For all Qualifications Based Selections, the selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

** **For RFP's that originate in Bureau of Transportation Planning only**, a price proposal must be submitted at the same time as, but separate from, the proposal. Submit directly to the Contract Administrator/Selection Specialist, Bureau of Transportation Planning **(see address list, page 2)**. The price proposal must be submitted in a sealed manila envelope, clearly marked in large red letters **"PRICE PROPOSAL – TO BE OPENED ONLY BY SELECTION SPECIALIST."** The vendor's name and return address MUST be on the front of the envelope. The price proposal will only be opened for the highest scoring proposal. Unopened price proposals will be returned to the unselected vendor(s). Failure to comply with this procedure may result in your bid being opened erroneously by the mail room.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

☐ **Qualifications Review / Low Bid** - Use Consultant/Vendor Selection Guidelines. See Bid Sheet Instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted and post the date of the bid opening on the MDOT website. The notification will be posted at least two business days prior to the bid opening. Only bids from vendors that meet proposal requirements will be opened. The vendor with the lowest bid will be selected. The selected vendor may be contacted to confirm capacity.

☐ **Best Value** - Use Consultant/Vendor Selection Guidelines. See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

☐ **Low Bid** (no qualifications review required - no proposal required.) See Bid Sheet Instructions below for additional instructions.

BID SHEET INSTRUCTIONS

A bid sheet(s) must be submitted in accordance with the "Guideline for Completing a Low Bid Sheet(s)" (available on MDOT's website). The Bid Sheet is located at the end of the Scope of Services. Submit bid sheet(s) separate from the proposal, to the address indicated below. The bid sheet(s) must be submitted in a sealed manila envelope, clearly marked in large red letters **"SEALED BID – TO BE OPENED ONLY BY SELECTION SPECIALIST."** The vendor's name and return address MUST be on the front of the envelope. Failure to comply with this procedure may result in your bid being opened erroneously by the mail room.

Clear Form

PROPOSAL SUBMITTAL INFORMATION

REQUIRED NUMBER OF COPIES FOR PROJECT MANAGER	PROPOSAL DUE DATE	TIME DUE
3	2/2/07	10 am.

PROPOSAL AND BID SHEET MAILING ADDRESSES

Mail the multiple proposal bundle to the MDOT Project Manager or Other indicated below.

☑ MDOT Project Manager ☐ MDOT Other

Michelle O'Neill
MDOT-Kalamazoo TSC
5372 S. 9th Street
Kalamazoo, MI 49009

Mail one additional stapled copy of the proposal to the Lansing Office indicated below.

Lansing Regular Mail	OR	Lansing Overnight Mail
☑ Secretary, Contract Services Div - B225 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Secretary, Contract Services Div - B225 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933
☐ Contract Administrator/Selection Specialist Bureau of Transportation Planning B340 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Contract Administrator/Selection Specialist Bureau of Transportation Planning B340 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933

GENERAL INFORMATION

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least four (4) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

5100D – Request for Proposal Cover Sheet
5100G – Certification of Availability of Key Personnel

(These forms are not included in the proposal maximum page count.)

Michigan Department of Transportation

SCOPE OF SERVICES
FOR
DESIGN SERVICES

CONTROL SECTION: 78042

JOB NUMBER: 89065

PROJECT LOCATION:

The project is located on M-60 within the Village Limits of Mendon, St. Joseph County.

PROJECT DESCRIPTION:

Prepare Preliminary and Final Scoping Reports for the above roadway location.

The anticipated start date of the service is March 19, 2007.
The anticipated completion date of the service is September 7, 2007.

PREQUALIFICATION CLASSIFICATIONS:

Primary Prequalification Classification:

Road Design – Roads and Streets

Secondary Prequalification Classification:

Traffic and Safety – Maintaining Traffic Plans & Provisions
Utilities Design-Hydraulics

DBE REQUIREMENT: N/A

MDOT PROJECT ENGINEER MANAGER:

Michelle O'Neill, P.E.
Kalamazoo Transportation Service Center
5372 South 9th Street
Kalamazoo, MI 49009
(269) 375-8689 office
(269) 544-0080 fax

CONSULTANT RESPONSIBILITIES:

The CONSULTANT shall prepare Preliminary and Final Scoping Packages for the project location as detailed in Attachment A. As part of this project, the CONSULTANT shall prepare and evaluate the proposed treatment for each roadway and determine the extent and cost of all work required for its implementation.

For the project, scoping will include but will not be limited to the following:

A. Verify the project location, the limits and the extents.

B. Conduct field reviews to obtain missing or supplement incomplete information.

C. Establish and detail the proposed scope of road work.

D. Determine Federal requirements and project conformance.

E. Perform Crash Analysis and recommend countermeasures including cost estimates.

F. Prepare pavement design recommendations for two different pavement treatments providing a 3R and 4R fix respectively. Reference MDOT Road Design Manual regarding 3R and 4R fixes. The two different pavement treatment recommendations will be the basis for the two courses of action being scoped in this contract.

G. Determine Maintenance of Traffic strategies for each recommended pavement treatment.

H. Compute and verify all quantities.

I. Compute and calculate detailed cost estimate using MDOT Pay Items.

J. Complete the Project Concept Statement and the Project Scoping Checklist.

K. Prepare a design hour estimate.

L. Prepare required documents (to include summary, typical cross sections, photographs, base plans, etc) required to answer all questions relating to the project scope of work (See Attachment A).

M. Determine Right of Way impacts, including detailed sketches.

N. Identify and provide solutions to any unique problems that may arise during the design of the project or that may affect the constructability.

O. Identify and provide solutions for Access Management and Context Sensitive Design for locations within the project limits.

DELIVERABLES:

Obtaining, reviewing, analyzing and incorporating project data and recommendations for all scoping related work. Work shall conform to current MDOT, FHWA, and ASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.). This will include, but will not be limited to, the following for the preparation of the Preliminary Scoping and the Final Scoping Packages for the project location.

PRELIMINARY SCOPING PACKAGE

Preliminary Scoping Packages shall be submitted on or before June 11, 2007 for MDOT review and comment. The Preliminary Scoping Package shall address all the items listed under SCOPE OF CONSULTANT DUTIES, Attachment A and under CONSULTANT RESPONSIBILITIES (GENERAL). If any of the aforementioned items are not included or not sufficiently complete as determined by the MDOT Project Manager, the Preliminary Scoping Package will be rejected. The CONSULTANT will have up to three (3) working days to make the changes, as directed by the MDOT Project Manager and re-submit the Preliminary Scoping Package. No additional compensation will be given to the CONSULTANT for costs associated with making the changes.

The pavement section and geotechnical recommendations are subject to change pending the outcome of the geotechnical investigations and Scope Review Meetings.
In the Preliminary Scoping Package, if there are any items, in the CONSULTANTS opinion, that need further review, discussion and/or additional information is needed from MDOT, those items shall be clearly listed on a cover sheet accompanying the Preliminary Scoping Package.

FINAL SCOPING PACKAGE

Final Scoping Packages shall be submitted on or before August 13, 2007. The Final Scoping Package shall address and document all the items listed under SCOPE OFCONSULTANT DUTIES, Attachment A, Attachment B, and under CONSULTANT RESPONSIBILITIES (GENERAL) and incorporate the comments and/or changes received from the Preliminary Scoping Package and the Preliminary Scope Review meeting.

The Final Scoping Package shall also include, two CD's. There shall be one single CD for the projects electronic files of the Base Map (.dgn file), cross sections (.dgn files), electronic files of the photos (.jpg files) and location map (file type subject to MDOT approval). The second CD shall be a copy of the entire Final Scoping Package in pdf format. Each CD ROM shall be contained in a separate envelope labeled with the control section, job number, project location and the CD contents. Each envelope shall be included as part of the package and shall be attached and connected through the 3 ring binder. Form of connection shall be approved by the MDOT Project Manager.

MDOT will have a minimum of nine (9) working days to review the Final Scoping Packages and if any of the aforementioned items are not included or are not sufficiently complete, the Final Scoping Package will be rejected. The CONSULTANT will have up to September 6, 2007 to make the changes, as directed by

the MDOT Project Manager and re-submit the Final Scoping Package. No additional compensation will be given to the CONSULTANT for costs associated with making the changes.

Before spreadsheets are submitted as part of the Final Scoping Package a preliminary copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content.

PROJECT CONSTRUCTION COST

For the project location a cost estimate shall be developed. The cost estimate shall include an adjustment for inflation (4% annual rate). The following are the items that shall be considered and shall be broken down by MDOT Pay Items and then rolled up into the categories as identified in the Project Scoping Checklist:

A. The estimated construction cost shall address:

1. Safety Related Work
2. Mainline Pavement (Base, Surface and Shoulder)
3. Non-Motorized
4. Geometric Improvements
5. Improve Alignment (Vertical/Horizontal)
6. Drainage Adjustment and Improvement
7. Joint Repair and Pavement Patching
8. Detours and Maintaining Traffic
9. Permanent Pavement Markings/Signs/Signals
10. Environmental
11. Miscellaneous
12. Aesthetic Opportunities
13. Municipal Utilities

B. The estimated number of real estate parcels and type (grading permit, easement or fee) and the associated cost for each.

PROJECT SCHEDULE:

The scheduled completion date for the Preliminary Scoping Packages is June 11, 2007 and August 13, 2007 for the Final Scoping Packages. The CONSULTANT shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts. These dates shall be used in preparing the CONSULTANT's Monthly Progress Reports.

Target Date	Description
June 11, 2007	Submit Preliminary Scoping Package
June 25 - 29, 2007	Preliminary Scope Review Meetings
August 13, 2007	Submittal of Final Scoping Package

September 7, 2007 Final Deliverables Due

MDOT will submit a preliminary pavement design for estimating purposes. However, the pavement design is subject to change.

PAYMENT SCHEDULE

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis. The CONSULTANT will not be reimbursed for costs associated with correcting errors or omissions by the CONSULTANT.

MONTHLY PROGRESS REPORT

On the first of each month, the CONSULTANT Project Manager shall submit a monthly project progress report to the MDOT Project Manager, Michelle L. O'Neill, P.E. (269-375-8689). The monthly progress report shall follow the guidelines in Attachment E.

FORMAT

The Preliminary and Final Scoping Packages (See Attachment A for items that will be included) shall be presented on regular letter size paper (8 ½" x 11") with the exception of the Base Maps, sketches and diagrams which shall be on 11" x 17" paper (and folded to match the 8 ½" x 11" paper). A cover sheet shall be entitled “Preliminary Scoping Package” or “Final Scoping Package”, as appropriate, and shall also include control section, job number, route, location description and proposed fix type. An index page shall also be included in each package.

There shall be ten (10) copies each of the Preliminary Scoping Package and three (3) copies each of the Final Scoping Package. One (1) copy of the existing plans, used to develop the scope, shall also be submitted with the Preliminary and Final Scoping Packages, for each project location.

The Preliminary Scoping Packages (see Attachment A for items that will be included) will be presented in a labeled (cover and side, paper color shall be determined by the MDOT Project Manager, to be entitled “Preliminary Scoping Package” and shall also list the control section, job number, route, location description and proposed fix type.) three ring binder, with an index and tabbed sections, containing regular letter size paper (8 ½" x 11") for the majority of the documents. 11" x 17" paper may be used for Base Maps, sketches and diagrams. If there are any items, in the CONSULTANTS opinion, that need further review, discussion and/or additional information from MDOT, those items shall be clearly listed on a cover sheet accompanying the Preliminary Scoping Package. The photographs included in the documents shall be in an electronic .jpg format with printouts at 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point. No fewer than 12 and no greater than 24 photos are to be provided. The Preliminary Scoping Package shall also include submittal of the report in electronic Adobe (.pdf) format (this may be emailed to the MDOT Project Manager at the time of submittal).

The Final Scoping Packages (see Attachments A & B for items that will be included) will be presented in a labeled (cover and side, paper color shall be determined by the MDOT Project Manager, to be entitled "Final Scoping Package" and shall also list the control section, job number, route, location description and proposed fix type.) three ring binder, with an index and tabbed sections, containing regular letter size paper (8 ½" x 11") for the majority of the documents. 11" x 17" paper may be used for Base Maps, sketches and diagrams. The photographs included in the documents shall be in an electronic .jpg format with printouts at 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point in the Packages. No fewer than 12 and no greater than 24 photos are to be provided.

The Base Map as identified in Attachment A is to be created electronically, using the MicroStation design software, and following all MDOT drafting standards and guidelines. The entire Base Map is to be created in English units and is to be placed within a single approved MDOT printed sheet. The full size of the MDOT printed sheet is (24" x 36"), however, only an (11" x 17"), a reduced size copy, needs be provided.

An English alignment shall be created. The alignment shall describe stations as 100 ft and carry the decimal place out to 2 decimal places (ie: 10+00.00). The alignment shall draw the station ticks at every 100 ft, and annotate the station ticks at every station (ie: 1+00.00, 2+00.00, 3+00.00). The stationing of the alignment shall match that of the old plans. If old plans are not available, then the alignment shall start at 10+00.00 and shall increase in station from either south to north, or west to east. The location of the alignment will match that of the old plans. If old plans are not available, then the alignment shall be located down the center of the roadway.

All spreadsheets shall be created using Excel (.xls files). Before the final spreadsheets are submitted, a preliminary copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content. All estimates and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the MDOT Project Manager.

All project related items are subject to review and approval by the MDOT Project Manager.

TRAFFIC CONTROL AND MDOT PERMITS

The CONSULTANT shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The CONSULTANT shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Steve Serdel, Utility and Permits Engineer, Kalamazoo Transportation Service Center at (269) 375-8615.

CONSULTANT RESPONSIBILITIES (GENERAL)

1. The MDOT Project Manager shall be the official MDOT contact person for the CONSULTANT. The CONSULTANT must either address or send a copy of all correspondence to the MDOT Project

Manager. This includes all Subcontractor correspondence and verbal contact records. The MDOT Project Manager shall be made aware of all communications regarding this project.

2. The CONSULTANT shall meet with the MDOT Project Manager to review the project, location of data sources, contact persons and relevant MDOT operations. The CONSULTANT shall review and clarify project issues, data needs and availability, the sequence of events and team meetings that are essential to complete the project scoping by the project completion date. Attention shall be given to critical target dates that may require a large lead time, such as scope review meetings, etc.

3. Maintain a Scoping Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the scopes, dates of submittals and receipt of information.

4. The CONSULTANT shall contact, in writing, the MDOT Project Manager whenever discoveries or design alternatives have the potential to require significant changes in the limits, quantities, costs, or right-of-way of the project.

5. Attend any project-related meetings as directed by the MDOT Project Manager.

6. The CONSULTANT representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The CONSULTANT shall bring an additional person to all meetings whose sole responsibility will be to take notes/minutes. The CONSULTANT shall also distribute the minutes to all meeting attendees.

7. The CONSULTANT will conduct field reviews to obtain missing or supplement incomplete information.

8. The CONSULTANT will be responsible for providing elevation view sketches at both sides of each and every bridge in the project area. The sketch must show the elevation of the roadway at 2 feet inside of the inside edge of metal and 2 feet outside of the outside edge of metal, as well as the interior lane lines, crown point and shoulder edges. The corresponding elevation of the structure under clearance immediately overhead must also be shown. The CONSULTANT shall field measure all elevations. All under clearance sketches must be shown looking up station and clearly depict the clear roadway width.

9. Determine impacts of the proposed pavement treatment on the existing horizontal and vertical alignments, pavements, curb and gutter, drainage, transit stops, right of way (ROW), etc. Every effort shall be made to minimize ROW impacts within the limits of the project. In areas of potential ROW impacts, the CONSULTANT shall request, in writing, copies of ROW maps from the MDOT Project Manager (requests may take up to two weeks from the date the request is received to fill) and document and identify the potential need for additional ROW, by station or address, type of ROW required (grading permit, easement or fee), and roadside improvements proposed (i.e. fencing, turf establishment, landscaping, non motorized, etc.)

10. Generate a Base Map, created electronically using the MicroStation design software, of the existing roadway using information from old plans, and/or, on site field reviews. The Base Map is to visually describe the existing roadway within the limits of the project. The project limits shall be defined for this

task as either be the greater of 250 feet beyond the Point of Beginning (POB) and the Point of Ending (POE) or the limits needed to fully accommodate the maintaining traffic limits as determined in Attachment G. The detail of the Base Map is to include the location of existing roadways, bridges, ramps, cross roads, interchanges and/or intersections. The Base Map is to show existing features; i.e. edge of pavements, edge of shoulders, curb lines, drainage courses, etc. The Base Map is to represent existing conditions and no proposed work is to be shown.

11. Prepare existing and proposed typical cross sections.

12. WATER MAINS OR SANITARY SEWERS. The CONSULTANT shall contact in writing the appropriate owner of public utilities within the project limits and request utility information. Requested information shall include existing utilities and any future plans regarding the utilities. If water mains and/or sanitary sewers are present within the project limits, the CONSULTANT shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. Send a letter to the MDOT Project Manager and outline where water main and/or sanitary sewer relocation is needed/ recommended. Provide the limits, an explanation for the relocation and a cost estimate for each location.

13. Perform storm water design calculations, including appropriate outlets and energy dissipation as necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. All design calculations, drainage maps and proposed profiles shall be included in the Preliminary and Final Scoping Reports under Attachment A.

14. Review and document final scope conformance to design elements as listed in Attachment C and 3R/4R Guidelines for non freeway jobs and 4R, AASHTO and Interstate Standards for freeway jobs. Documentation shall be broken down into the following sections for each element: Existing condition, Treatment as per Design Standards, and Proposed Treatment. If the Proposed Treatment is not in accordance with the Treatment Per Standard, an additional section shall be added entitled "Reason for not Meeting Standard" which shall contain documentation for reason and justification (if cost is given as the reason, the cost for doing the Treatment per Standard shall be given along with the cost for the Proposed Treatment. Normally cost alone is not a proper justification for not meeting standards.).

15. Prepare a table of the values used for the evaluation of the elements as listed in Attachment D and 3R/4R Guidelines for non freeway jobs and 4R, AASHTO and Interstate Standards for freeway jobs. The table shall at a minimum contain the following; all the minimum values as per standard for the associated design element, where the minimum value as per design standard were derived from, all values used to determine conformance, where values used for conformance were derived from and all formulas used for the calculation of values. Before the final tables are submitted, an advance copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content.

16. Review and document the roadside safety related items (i.e. guardrail, barriers, attenuators, etc.) which need to be modified or included in the project. Documentation is to include location, existing type and condition, and the recommended treatment. This information shall be included in the appropriate area of the Attachment A.

17. CRASH ANALYSIS AND RECOMMEND COUNTERMEASURES. Perform crash analysis and recommend countermeasures, see Attachment J for details. This shall include but shall not be limited to, the following. Perform crash analysis which shall include the last 5 years of reliable data for the analysis period The CONSULTANT will be furnished 5 years of data. Determine countermeasures based on the crash analysis and provide a detail drawing explaining each recommendation. Determine ROW impacts for each countermeasure identified. Determine the construction cost estimate for each countermeasure using MDOT Pay Items. Summarize the countermeasures for each crash pattern individually. Include the corresponding countermeasure, along with the associated ROW impacts and construction cost estimate. The construction cost estimate for each countermeasure recommendation shall be presented in the Preliminary Scoping Package(s) and shall be reviewed and approved by MDOT before inclusion into the Final Scoping Package. Develop a Time of Return (TOR) analysis for each countermeasure using the MDOT TOR format as provided by the MDOT Traffic Safety Engineer.

18. Document and identify locations of possible environmental issues (historical, archeological, LUST Sites, wetlands, tree removals, etc.) which may impact the project, and estimate the cost of treatment. For every estimated tree removed, two shall be replaced. This information shall be included in the appropriate area of the Attachment A.

19. If excavation is required, submit the excavation locations (list them by station) which may contain contamination. This information shall be included in the appropriate area of the Attachment A.

20. Document and identify (location and who has responsibility for) any existing lighting that may be impacted, or should be included, in the projects. Incorporate work into the estimate.

21. MAINTAINING TRAFFIC. Develop the Maintaining Traffic, as per Attachment F.

22. The CONSULTANT will determine at least two (2) different pavement treatment recommendations. The pavement treatment recommendations will be based on MDOT 3R and 4R Guidelines as listed in the Road Design Manual. These treatments for the purpose of the report may be considered by their respective fix life in years. For example, two recommendations may differ as one recommendation provides a fix life of 10 year and the other recommendation provides a fix life of 20 years. The different pavement treatment recommendations will be designed by the CONSULTANT utilizing AASHTO approved pavement design software (see Attachment “H”). The different pavement treatment recommendations will both be carried through scoping as courses of action, and cost estimates provided for both treatments. Geotechnical analysis and relevant geotechnical quantities will also be included where relevant.

23. Compute and verify all quantities necessary to complete the Project Concept Statement and Project Scoping Checklist for each of the projects. See Attachment I for the blank forms and for an example of the data types required.

24. Compute and verify design hours necessary to complete the design of both different 3R/4R fixes. Break down hours into the different PPMS tasks and be as detailed as possible.

25. Specifically identify any local participation that is required and/or requested for the project location. Examples where local participation is required are: Act 51, water, sanitary, storm sewer upgrades, work beyond the spring points on local streets, and/or drainage. For each agency (there may be more than one), individually identify the type of work/improvement, itemize the costs and then separately estimate the amount of the respective agencies participation.

26. CONTEXT SENSITIVE SOLUTIONS. Identify, contact and coordinate with all affected governmental agencies (County, and/or city, township) within the project limits (and directly abutting if any part of the construction influence area will be within another agencies area). Develop a Public Involvement Plan and with the coordination of the MDOT Project Manager, provide all information necessary for stakeholder input meetings, see Attachement G. Coordination will involve, at a minimum, an initial letter stating the project and its scope and requesting local input, within 30 days, in the development of the detailed scope. A follow-up letter, if no response is given, and a final letter stating the process that occurred and what the final scope will be to all affected governmental agencies. There may be the need to attend meetings and receive and return telephone calls from the affected agencies. All local requests shall be forwarded to, and reviewed, with the MDOT Project Manager. The CONSULTANT shall not, and cannot, make any commitment to a local agency for the inclusion of work into a project. Only MDOT can make such a commitment. Any commitment from MDOT shall be in written form from the MDOT Project Manager. MDOT shall be informed of any meeting with the affected agencies a minimum of 72 hours in advance of the meeting. All discussions with agencies shall be documented and submitted with the monthly progress reports. Incorporate any MDOT identified and/or approved (if approved, include copy of MDOT approval) local needs/requests into project scope.

27. Prepare a spreadsheet summary of the local coordination that occurred. The summary shall document the planning/coordination process that occurred with each of the affected local agencies. The summary shall include at a minimum specifically what was sent to who and when, what was received from who and when and what responses were made (and why) to who and when.

28. ACCESS MANAGEMENT. Develop a list of driveways identified for potential closure/relocation in keeping with best access management practices.

29. Provide photographs and digital files (.jpg files) of the existing roadway and roadside conditions to document the needs as identified in the project scope.

30. If traffic signals exist within project, provide a summary of traffic signal modernization that may apply and associated costs should be included in the detail cost summary.

MDOT RESPONSIBILITIES (GENERAL)

A. Schedule and/or conduct the following:

1. Project related meetings.
2. Coordinate all scoping activities that require MDOT personnel.

B. Furnish CD of old plans within the control section for the area, if available.

C. Supply information on existing pavement structure as necessary/available including Pavement management System data and Sufficiency Rating data.

D. Furnish a list of the utility companies present within the control section of the project with contact information.

E. Furnish ROW maps of the area.

F. Furnish hard data for Crash Analysis.

G. Furnish existing traffic signal plan information.

H. Furnish the Project Area Contamination Study (PACS).

I. Make available existing (limited) survey data (electronic files) from 2003 for CONSULTANT use.

CONSULTANT PAYMENT

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the CONSULTANT for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the CONSULTANT. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

The use of overtime hours is not acceptable unless prior written approval is granted by the MDOT Region Engineer and the MDOT Project Engineer Manager. Reimbursement for overtime hours that are allowed

will be limited to time spent on this project in excess of forty hours per person per week. Any variations to this rule should be included in the price proposal submitted by the CONSULTANT and must have prior approval by the MDOT Project Engineer Manager.

ATTACHMENT "A"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon
The Preliminary and Final Scoping Reports

The Preliminary and Final Scoping Reports shall contain the following, and shall be assembled in the order as listed. Please note, these are not tab sections, but report sections.

The Scoping Report is the complete written description, and explanation, of the entire project scope, as well as a comparison as needed between multiple courses of action where relevant.

A unique Scope Report is to be written and shall follow the format as shown below.

The Scope Report is to be written using complete sentences and sentence structure. In addition, simple, clear and concise language is required to ensure that the Report is both readable and understandable.

Also, the listed format contains many sections which may, or may not, apply to the project. Sections which do not apply may be omitted from the Report as directed by the Project Manager. Information which has no apparent section may be placed within a related section, or within a newly created section. Keep the addition of new sections to a minimum.

Project Description
Provide a general statement regarding the project type, length and nature of work being proposed in the scoping of the project. Average length should be no more than 1 - 3 sentences.

Project Limits and Location Map
Establish the projects limits (roadway name, roadway number, project beginning, project ending, mile points (both Control Section and PR), project length, major cross streets, local municipalities affected, etc.). List also if this roadway is an NHS route, a non-NHS route, or if it registered as a National Historic Highway. Present the information in a map form showing the project area and above mentioned information presented on regular letter size paper (8 ½" x 11").

Sign Off Sheet
A sheet listing the members of the CONSULTANT's Scoping Team (the members name, members signature and area of contribution). Also on this sheet, the CONSULTANT is to list all the sources used in establishing existing information (old plans used, limits of coverage of old plans, date of on site visits, etc).

Design Speed
List the following information for each of the major roadways within the project limits:
Posted Speed (mph) = _____ Design Speed (mph) = _____

If speeds change within the project limits, list all segments and associated mile points.

Pavement Treatments
Address each pavement treatment for each course of action.

Cross Section
A brief description of the existing and proposed cross section (pavement type, lane width, curb and gutter, catch basins, storm sewer location, side slopes, ditch location, setback to existing right of way line, etc.) for each course of action being proposed as potential scope alternatives. Include a statement regarding the impact the proposed pavement treatment will have upon existing, or proposed, curb and gutter. Include a brief statement to establish the presence and location of existing pedestrian sidewalk, and existing sidewalk ramp terminals at sidewalk street intersections. Note: At locations of sidewalk street intersections, if not already present, ramp terminals will be installed.

Discussion of the existing and proposed cross sections through the project length will also address the existing pavement crown and super elevation, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

Include a statement addressing the existing slopes and ditches, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Vertical Alignment
Address the existing vertical alignment of the roadway, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments). The basis of any correction should be reflective of existing conditions being substandard (i.e. K value too low, not enough sight distance, etc).

Horizontal Alignment
Address the existing horizontal alignment of the roadway, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

Major Intersections
List all Major (signalized) Intersections within the limits of this project. Include a brief description of the existing intersections, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Discuss alterations based on analysis of the existing geometric conditions and the existing and future traffic volumes through the intersection. Include any potential economic growth impacts that are expected by local governmental agencies. Include in the intersection analysis and discussion, additional recommended geometric improvements, in particular the recommended countermeasures as identified through the Crash Analysis, and the impact that these improvements will have on the proposed project.

Minor Intersections

List the number of Minor Intersections present within the limits of this project. Include a brief description of the type of intersections, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Discuss alterations based on analysis of the existing geometric conditions and the existing and future traffic volumes through the intersection. Include any potential economic growth impacts that are expected by local governmental agencies. Include in the intersection analysis and discussion, additional recommended geometric improvements, in particular the recommended countermeasures as identified through the Crash Analysis, and the impact that these improvements will have on the proposed project.

Driveways

List the number and type of driveways present within the limits of this project. Include a brief description of the type of driveways, and the impact that the proposed project will have upon them. Where access management concerns exist, note concerns and make recommendations (to include any potential corrections or recommended adjustments or closures).

Guardrail, Barriers and Attenuators

Discuss the existing guardrail, barriers and attenuators, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Make note of locations where culvert extensions and/or slope flattening would be recommended to eliminate the need for guardrail, and make note of locations that do not currently include barrier but should.

Other Safety Improvements

Address additional recommended geometric improvements, in particular the recommended countermeasures as identified through the Crash Analysis, and the impact that these improvements will have on the proposed project. DO NOT reiterate recommendations from crash analysis reflected in other portions of the report (i.e. typical section changes, intersection improvements, etc).

Bridges

List all existing bridges within the limits of this project, in which the roadway crosses over a bridge. Explain for each bridge how the pavement transition into the bridge deck will be addressed. Provide lane and shoulder widths on bridges.

List all existing bridges within the limits of this project, in which the roadway passes under a bridge. Listing the existing underclearance for each bridge, and explain how the pavement will be treated below the bridge, and how the issue of bridge underclearance will be addressed. Provide lane and shoulder widths under bridges.

Drainage

Address the existing drainage throughout the project length. Include any potential corrections or recommended adjustments that are required in order to alleviate any existing drainage issues within the project limits. County drains within the influence of the project must be identified. The County Drain Commissioner must be contacted to provide input into the project design. The County Drain Commissioner for St. Joseph County is David Hassenger, 269-467-5600. Note that drainage issues need to be addressed, and are not specific to any course of action being presented to deal with pavement life span.

Environmental Issues
Address any existing environmental issues, and the impact that the proposed project will have upon them. Include any potential corrections or recommended adjustments to mitigate environmental impacts. Make note of potential permit needs.

Local Concerns
Address local concerns or issues that were raised through the public involvement process as outlined in Attachment "G". All issues raised do not need to be addressed here, as all comments and responses are captured in Appendix C. Discuss only those issues which resulted in scope changes, or have potentially significant impact on the proposed project.

Maintenance of Traffic
Provide the maintenance of traffic recommendations as developed through the process as outlined in Attachment "F".

Right-of-Way Needs
For the roadway in general, each recommended geometric/safety improvement (including the Crash Analysis recommended countermeasures, slope flattening recommendations and culvert extensions), each intersection, each commercial and/or residential driveway, each signal and each sign; write a brief statement addressing the existing right of way, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments). If additional right of way is required, note type of right-of-way that will be needed (fee take, grading permit, permit to grade drive, etc.).

Signage Recommendations
Address the existing traffic signs, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Any modifications or replacements of overhead sign structures will be included in this discussion.

At Grade Rail Road Crossings
Address the existing at grade railroad crossings, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Utilities
Address the existing utilities present within the roadway right of way, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Detail Cost Summary
Provide a summary of the estimated construction cost after scoping for each course of action, list the number of lane miles within the project limits, and a price per lane mile.

Appendix A: Level One Design Criteria Checklists
Provide the Level One Design Criteria Checklists as shown in Attachment "D". Note

that there is a checklist for existing and proposed conditions. Design exceptions will not be allowed, and all courses of action being presented in the Scoping Report must have provisions to eliminate any design exception conditions as determined by the Engineer.

Appendix B: Final Design Criteria

Provide a summary of the Design Criteria utilized to evaluate and constrain the scope for each course of action. Use the format provided in Attachment "D".

Appendix C: Public Involvement Public Comments

Include comments made at each meeting which solicited public comment. Provide response to each public comment that states how that comment was integrated into the project scope, or how that comment was used to affect the scope in some fashion.

Appendix D: Detail Cost Estimate

Estimates are to be as detailed as possible. They shall be developed using the most recent MDOT Pay Items and are to be provided in spread sheet format. Individual Pay Item costs shall be rolled up into a Construction Cost

Appendix E: Detailed Design Hours Estimate

Estimates are to be as detailed as possible, attempt to breakdown hours per PPMS tasks.

Appendix F: Crash Analysis Data

Summary of countermeasure recommendation(s) which shall include each location's crash pattern and countermeasure individually listed along with the associated ROW impacts (area and type) and construction cost estimate.

Appendix G: Intersection Traffic Counts

Summary diagrams showing am and pm peak traffic counts for each major intersection within the project limits.

Appendix H: DARWin Pavement Design Output

Appendix I: Field Notes & Photographs

Provide actual photographs and digital files (.jpg files on attached CD ROM) of the existing roadway and roadside conditions to document the needs as identified in the project scope. The photographs included in the documents shall be 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point. No fewer than 8 and no greater than 24 photos per project location are required.

Appendix J: Base Plans

Location Map: A location map shall show a map of the project area showing the roadway name, roadway number, project beginning, project ending, project length, major cross streets, interchanges and local municipalities affected. The Location Map shall be presented on 11” x 17” paper.

Typical Cross Sections: Prepare existing typical cross sections and proposed typical cross sections - generally one per standard cross section area (i.e. if the road changes from a three lane to a five lane section, a cross section for the three lane and for the five lane sections will be needed) for each course of action being presented as potential scope alternates.

The typical cross sections, for each standard cross section area, are to be created on 11" x 17” sheets, with the existing typical cross section for the standard cross section area, drawn above the proposed typical cross section for the same standard cross section area.

The existing typicals for each standard cross section shall detail the existing conditions (pavement type, lane width, curb and gutter, shoulders, side slopes, ditch locations, setback to existing right of way limits, storm sewer/drainage structure locations, etc.). The proposed typicals for each standard cross section shall detail the proposed pavement treatments (cold mill, resurface or reconstruct, etc.). The proposed typicals shall also show new lane widths, curb and gutter/shoulders, drainage structures (new, adjusted or tapped into existing), storm sewers and ditches, etc..

The MDOT reviewer, by viewing the typical cross sections, should be able to understand the existing pavement section, the proposed pavement section, and all of the work that is expected to implement the project. For example, if additional right of way will be required, the typicals should provide a visual explanation as to why so that the MDOT reviewers can evaluate options.

Base Map: Generate a single Base Map, created electronically using the MicroStation design software, of the existing roadway using information from old plans, and/or, on site field reviews. The Base Map is used to visually describe the existing roadway within the limits of the project on one page. The project limits for this task shall be defined as the greater of either 400 feet beyond the Point of Beginning (POB) and the Point of Ending (POE) or the limits needed to fully accommodate the maintaining traffic limits as determined in Attachment F. The detail of the Base Map is to include the location of existing roadways, bridges, railroads and cross roads. The Base Map is to show all existing features; i.e. edge of pavements, edge of shoulders, curb lines, drainage courses etc. and label all roads, railroads and drainage features. The Base Map is to represent existing conditions without showing proposed work. (See Appendix A for an example).

An 11" x 17", a reduced size copy, of the electronically created base map, showing the entire project limits, on 1 page, is to be provided. If it is recommended that the project can be designed in log job format, then an 8 ½" x 11", full size copy, of the electronically created base map, showing the entire project limits on one (1) page, is to be provided.

Base Sheets: The Base Sheets are to be created electronically using the MicroStation design software and follow all MDOT drafting standards and guidelines - as can be applied in English units. The Base Sheets shall be developed using the Base Map for each of the entire project limits. The scale of the Base Sheets shall be appropriate for the length and type of project (1"=40' for urban freeways; 1"=100' for rural freeways). The Base Sheets are to be created in English Units and are to be placed within an approved MDOT printed sheet. The full size of the MDOT printed sheets, at scale, is 24" x 36", however, an 11" x 17", a reduced size copy, is required. If it is recommended that the projects can be designed in log job format, then the full size of the MDOT printed log sheet is 8 ½" x 11" and the scale of the base sheets are not to exceed 100 scale.

Maintenance of Traffic Typical Sections: Requirements for these sheets are the same as for the corresponding sheets (typical sections). All maintenance of traffic courses of action are to be detailed with sets of typical sections.

ATTACHMENT "B"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

SUPPLEMENTAL PROJECT SCOPING INFORMATION

The following information is to be provided in notebook format after acceptance of the Final Scoping Report by the Project Manager:

2. **3R / 4R Breakdown and Scope Conformance to Design Elements**

For the Preliminary Scoping Report, documentation shall include Existing Condition, Treatment as per Design Standards, and Proposed Treatment. If the Proposed Treatment is not in accordance with the Treatment as per Design Standard, an additional section shall be added entitled "Reason for not Meeting Design Standards". This section shall provide documentation for the justification for not being in conformance.

3. **Project Concept Statement and Project Scoping Checklist**

Compute and verify all quantities necessary to complete the Project Concept Statement and Project Scoping Checklist. (See Attachment "H").

4. **Correspondence** (MDOT, Utility, Local and Other)

Actual correspondence sent and received, organized by correspondent, in order of latest date.

5. **Quantity Calculations**

6. **List of Invitees and Sign in Sheet for Scope Review Meeting.**

The list of people invited to the Scope Review Meeting (to be supplied by MDOT Project Manager) and the actual sign-in sheet from the Scope Review Meeting.

7. **Minutes from the Scope Review Meeting.**

ATTACHMENT "C"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

13 Design Elements Subject to Formal Exceptions

1. Design Speed
2. Lane Width
3. Shoulder Width
4. Bridge Width
5. Structural Capacity
6. Horizontal Alignment
7. Vertical Alignment
8. Grade
9. Stopping Sight Distance
10. Cross Slope
11. Super elevation
12. Vertical Clearance
13. Horizontal Clearance (not including clear zone)

For the 3R/4R Guidelines, refer to Chapter 3, "Geometrics", of the Michigan Department of Transportation Road Design Manual.

ATTACHMENT "D"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

LEVEL ONE DESIGN CRITERIA CHECKLIST

The following format will be utilized to report conformance for existing and proposed conditions for the FHWA's level one design criteria. No other format will be accepted. Calculations supporting these checklists will be provided in the "Supplemental Project Scoping Information" (see Attachment "B").

FINAL DESIGN CRITERIA

The following format will be utilized to display the design criteria used to constrain the project scoping process. No other format will be utilized for this purpose. If additional design criteria are needed to fully convey the constraints of the design, they may be added to the table.

Road			Design Unit	
Design Year AADT			CS	
Date			JN	
			Page	

Appendix A
Level One Design Criteria Checklist – Existing Conditions

Enter the lane width provided, etc. in the appropriate column.

Design Criteria (Provide numerical value for project, where indicated)	Reference	Do the existing conditions meet MDOT criteria?		
		Yes	No	N/A
1. Design Speed: Mainline: mph Ramps: mph				
2. Lane Width Mainline: ft Ramps: ft Auxiliary lanes: ft				
3a. Uncurbed Sections – Shoulder Width adjacent to: Mainline: ft Ramps: ft Auxiliary lanes: ft				
3b. Curbed Sections – Curb Offset: Mainline: ft				
4. Bridge Clear Roadway Widths				
5. Structural Capacity				
6. Horizontal Curvature (minimum Radius)				
7. Superelevation Rate				
8a. Stopping Sight Distance – Horizontal Curves				
8b. Stopping Sight Distance – Vertical Curves				
9. Maximum Grades				
10. Through Travel Lane Cross Slope ft				
11. Vertical Clearances				
12. Accessibility Criteria for Handicapped Individuals				

Road			Design Unit	
Design Year AADT			CS	
Date			JN	
			Page	

Appendix A
Level One Design Criteria Checklist – Proposed Design

Enter the lane width provided, etc. in the appropriate column.

Design Criteria (Provide numerical value for project, where indicated)	Reference	Does proposed design meet MDOT criteria?		
		Yes	No*	N/A
3. Design Speed: Mainline: mph Ramps: mph				
4. Lane Width Mainline: ft Ramps: ft Auxiliary lanes: ft				
3a. Uncurbed Sections – Shoulder Width adjacent to: Mainline: ft Ramps: ft Auxiliary lanes: ft				
3b. Curbed Sections – Curb Offset: Mainline: ft				
8. Bridge Clear Roadway Widths				
9. Structural Capacity				
10. Horizontal Curvature (minimum Radius)				
11. Superelevation Rate				
8a. Stopping Sight Distance – Horizontal Curves				
8b. Stopping Sight Distance – Vertical Curves				
13. Maximum Grades				
14. Through Travel Lane Cross Slope ft				
15. Vertical Clearances				
16. Accessibility Criteria for Handicapped Individuals				

* If a design criterion is not met, documentation must be provided that the TSC is aware and has approved the project scope aware of the sub-standard item.

FINAL DESIGN CRITERIA

ITEM	REFERENCE	STANDARD	EXISTING	PROPOSED
DESIGN YEAR 2025 AADT				
DESIGN YEAR 2025 COMMERCIAL AADT (%)				
DESIGN SPEED (MPH)	MDM SECTION 3.06, 3.11.03 AASHTO TABLE X-1			
DESIGN LEVEL OF SERVICE	AASHTO TABLE II-6			
HORIZONTAL ALIGNMENT				
MAX. DEGREE OF CURVE	MDM SEC. 3.03.01A			
MIN. LENGTH OF CURVE (FT)	MDM SEC. 3.03.01B			
MAX. DEGREE OF CURVE W/O SPIRAL	MDM SEC. 3.04.04			
MAX. SUPERELEVATION (%)	MDM SEC. 3.04 & STD. R-107			
MAX. ROLLOVER BETWEEN PAVEMENT AND SHOULDER (%)	STANDARD R-107			
MAX. ROLLOVER BETWEEN PAVEMENT CROSS SLOPES (%)	STANDARD R-107			
VERTICAL ALGINMENT				
MAX. PERCENT GRADE - UP (%)	AASHTO TABLE VIII-1 AASHTO P.922			
MAX. PERCENT GRADE - DOWN (%)	AASHTO TABLE VIII-1 AASHTO p.922			
MIN. PERCENT GRADE	AASHTO p.235			
STOPPING SIGHT DISTANCE (FT)	STANDARD G-700			
K-VALUE (CREST)	AASHTO EXHIBIT 3-76			
K-VALUE (SAG)	AASHTO EXHIBIT 3-79			
VERTICAL CLEARANCE (FT-IN) OVER PAVEMENT	MDMBRIDGE DESIGN SEC 7.01.08			
VERTICAL CLEARANCE (FT-IN) OVER SHOULDER	MDMBRIDGE DESIGN SEC 7.01.08			
CROSS-SECTION ELEMENTS				
TOTAL NUMBER OF LANES	FIELD VERIFIED			
LANE WIDTH (FT)	MDM SEC. 3.07.A			
MEDIAN SHOULDER WIDTH (FT)	STANDARD R-110B MDOT PLANS			
RIGHT SHOULDER WIDTH (FT)	STANDARD R-110B MDOT PLANS			
MEDIAN SIDE SLOPE	MDM SEC. 2.03.01 MDOT PLANS			
RIGHT SIDE SLOPE	MDM SEC. 2.03.01 MDOT PLANS			
BACKSLOPE	MDM SEC. 2.03.01			
DITCH WIDTH (FT)	MDM SEC. 4.04.02 STANDARD R-105			
MIN. DITCH GRADE (%)	MDM SEC. 4.04.01			
NORMAL CROSS SLOPE (PAVEMENT) (%)	MDM SEC 3.11.03.E, STANDARD R-107E			
NORMAL CROSS SLOPE (SHOULDER) (%)	STANDARD R-107E STANDARD R-110			
MISCELLANEOUS				
STOPPING SIGHT DISTANCE	AASHTO TABLE III-1 & MDOT DESIGN GUIDE VII-700			
CLEAR ZONE DISTANCE (FT)	MDM SEC 7.01.11			
RAMP TERMINAL DETAILS	STANDARD V11-370			

MONTHLY PROGRESS REPORTS

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

Control Section xxxxx
Job Number xxxxx
Structure Number Sxx
Date 00/00/0y

MONTHLY PROGRESS REPORT

A. Work accomplished during the previous month.

B. Anticipated work items for the upcoming month.

C. Real or anticipated problems on the project.

D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.

E. Items needed from MDOT.

F. Copy of Verbal Contact Records for the period (attached).

CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

Scoping Schedule as of 00/00/07

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or **Actual** Start Dates	(Anticipated) or **Actual** Finish Dates	Task Description
00/00/00	**00/00/00**	00/00/00	**00/00/00**	Initial Project Meeting.
00/00/00	**00/00/00**	00/00/00	**00/00/00**	Maintaining Traffic Meeting.
00/00/00	**00/00/00**	00/00/00	**00/00/00**	Field Work and Documentation.
00/00/00	**00/00/00**	00/00/00	**00/00/00**	Local Coordination Letters (first).
00/00/00	**00/00/00**	00/00/00	**00/00/00**	Review, Check and Analyze Field Data.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Generate Base Map, Cross Sections, Maintaining Traffic Typicals.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Perform Crash Analysis and Determine Countermeasures.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Prepare Write Up for Maintaining Traffic.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Submit Utility Requests.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Submit Preliminary Scoping Report.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Scope Review Meeting.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Local Coordination Letters (second).
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Submit Final Scoping Report.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Local Coordination Letters (third).
00/00/00	(00/00/00)	00/00/00	**00/00/00**	Submit Final Deliverable Report.

VERBAL CONTACT RECORD

Control Section 78042
Job Number 890650
Structure Number N/A
Date 00/00/0y

Joe Engineer talked to Joe Safety and decided to use a 0.05'/ft super on ramp A leading into the bridge.

ATTACHMENT "F"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

DEVELOP MAINTAINING TRAFFIC CONCEPT FOR EACH PROJECT LOCATION

1. SCOPE

This procedure covers the development of a concept to maintain and control traffic during construction.

2. WORK STEPS

A. Review the type of construction task(s) included in the project.

B. Contact the Project Manager and request a meeting with the Kalamazoo TSC Traffic & Safety Engineer (allow a minimum of two (2) weeks for a meeting date to be determined). Review the traffic data and the project site to determine project specific construction zone traffic requirements. Requirements shall be consistent with the constraints identified at the meeting with the Kalamazoo TSC Traffic & Safety Engineer. Any necessary or recommended exceptions shall be clearly identified and justification provided.

C. Prepare preliminary written recommendations for maintaining traffic. Items that WILL be included in the recommendations at a minimum are:
   i. Constraints as identified by the Kalamazoo TSC Traffic and Safety Engineer.
   ii. Method for maintaining traffic. Typical and non-typical areas shall be addressed. All areas where the pavement widths are narrower than typical shall be clearly noted and the recommendations for maintaining traffic shall address these areas.
   iii. Exceptions to constraints as identified by the Kalamazoo TSC Traffic and Safety Engineer. Justification shall be required for any exceptions.
   iv. Need for detour, staging and/or flagging operation.
   v. Need for temporary widening and/or shoulder upgrading.
   vi. Time constraints and lane requirements (number and width).
   vii. Method for maintaining traffic at intersecting streets.
   viii. Local considerations (school buses, emergency vehicles, large traffic generators, etc.).
   ix. Need for temporary traffic signals (a minimum of two signal heads in view at all times).
   x. Construction zone speed limits.
   xi. Special events (parades, festivals, etc.).
   xii. Recommendations for expedited construction.

D. Based on the preliminary written recommendation (developed above), prepare maintaining traffic typicals. Typicals shall be prepared using the existing typical cross sections

developed in item 9 under Section XII. CONSULTANT RESPONSIBILITIES (GENERAL) as a base. Each of the items recommended in Section 2, Task C of this Attachment shall be superimposed onto those typicals.

E. Submit the written recommendations for maintaining traffic as developed in Section 2, Task C of this Attachment and the maintaining traffic typicals as developed Section 2, Task D of this Attachment with the Preliminary Scoping Report.

F. Receive any items returned by the MDOT Region CONSULTANT Coordinator for Scoping and/or from meetings at which maintaining traffic has been discussed, as incomplete or deficient and make the necessary revisions.

G. Submit the revised recommendations and maintaining traffic typicals with the Final Scoping Report.

ATTACHMENT "G"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

Public Involvement Schedule

Meeting	Purpose	Attendees	Preliminary Date
Project Kick-Off	• Provide interface between MDOT team and CONSULTANT team. • Provide opportunity for CONSULTANT to identify issues/questions regarding contract.	CONSULTANT Project Team TSC Manager TSC Development Engr	
Initial Stakeholder Input Forum	• Establish project stakeholder group • Establish Stakeholder role in scoping process • Identify preliminary issues within project limits • Gain input for potential Courses of Action (COAs)	CONSULTANT Project Team TSC Manager TSC Development Engr Region Planner Stakeholders (to be determined by project location)	
Project Preliminary Report Review	Provide MDOT opportunity to discuss Courses of Action (COAs) set forth in Perliminary Scoping Report.	CONSULTANT Project Team TSC Manager TSC Development Engr TSC Traffic & Safety Engr TSC Utility & Permit Engr Region Resource Analyst	
Stakeholder Review of Preliminary Report	Provide opportunity for stakeholders to review COAs	CONSULTANT Project Team TSC Manager TSC Development Engr Region Planner Stakeholders (to be determined by project location)	
Stakeholder Review of Final Report			

ATTACHMENT "H"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

MDOT uses the AASHTO 1993 Guide for Design of Pavement Structures. The design software accompanying AASHTO is the DARWin pavement design program. The latest version of DARWin can be obtained from ERES CONSULTANTs, Inc.

Pavement Design Process

1. Request ESALs (Project Manager).

2. Obtain appropriate soil borings/pavement cores. This should include recommendation for "Roadbed Soil Resilient Modulus" (flexible design) and "Mean Effective Modulus of Subgrade Reaction" (rigid design).

3. Obtain PMS data (Project Manager)

4. Obtain existing typical sections and plans.

5. Determine proposed preliminary typical section.

6. Determine appropriate design parameters for DARWin.

7. Use DARWin to determine proposed pavement section.

DARWin Pavement Design Inputs

Flexible Pavement
1. ESAL's: Use the 20 year ESAL's as provided by Project Manager from MDOT Planning.
2. Initial Serviceability: 4.5
3. Terminal Serviceability: 2.5
4. Reliability level: 95%
5. Overall standard deviation: 0.49
6. Roadbed Soil Resilient Modulus: Use "Falling Weight Deflectometer" (FWD) data when possible. Otherwise choose a value based on the predominant soil type.

Soil Type	Roadbed Resilient Modulus (psi)
Limestone Gravel	36,000 – 43,000
Gravel (22A)	28,000 – 33,000
Salvaged Gravel	27,000 – 30,000
Sand Gravel	19,000 – 23,000
Sand	7,300 – 16,000

Loamy Sand	6,300 – 11,000
Sandy Loam	4,500 – 7,000
Loam	4,400 – 4,800
Clay	2,700 – 3,200

7. Stage Construction: Use 1
8. Structural Coefficients:

Top & leveling	0.42
HMA Base	0.36
Rubblized Conc	0.18 – 0.20
Agg Base	0.14
Sand Subbase	0.10

9. Elastic Modulus:

Top & leveling	390,000
HMA Base	275,000
Rubblized Conc	45,000 – 55,000
Agg Base	30,000
Sand Subbase	13,500

10. Drainage Coefficient (Table 2.4, pg II-25, AASHTO Guide for Design of Pavement Structures)

Top & leveling	1
HMA Base	1
Rubblized Conc	1
Agg Base	1
Sand Subbase	1

Rigid Pavement

1. ESALs: Use 20 year ESALs
2. Initial Serviceability: 4.5
3. Terminal Serviceability: 2.5
4. 28-day mean PCC Modulus of Rupture: 670
5. 28-day mean Elastic Modulus of Slab: 4,200,000
6. Mean Effective k-value: Figures 3.3 and 3.6 in AASHTO 1993 Guide for Design of Pavement Structures.
7. Reliability Level: 95%
8. Overall Standard Deviation: 0.49
9. Load Transfer Coefficient, J: 2.7 for tied shoulder or wide (14') lane; 3.2 for un tied shoulder
10. Overall Drainage Coefficient: 1.00 to 1.17
11. Stage Construction: Use 1
12. Effective Pavement Thickness-Condition Survey Method: Perform site review of existing pavement and planned amount of joint work (for conc overlay).

ATTACHMENT "I"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

Project Concept Statement / Project Scoping Checklist

These items will be provided to the CONSULTANT by the Project Manager.

ATTACHMENT "J"
CS 78042 – JN 890650
M-60 Scoping within the Village of Mendon

Draft and Final Crash Analysis Reports

The CONSULTANT shall provide MDOT with a Crash Analysis Report which shall detail the safety performance of the project location (includes not only the mainline but all ramps, major and minor intersections and crossovers within the project limits) and provide detailed graphic depiction of countermeasures and cost/benefit analysis for crash concentration locations. The Crash Analysis Report shall at a minimum compare the project location features (mainline, ramps, major intersections, minor intersections and cross overs) to regional averages, identify crash concentration locations, examine crash concentration locations for crash patterns and provide countermeasures for correctable crash patterns. The CONSULTANT shall combine a thorough review of computer-based crash records with field reviews of the roadways characteristics (geometric and operational features shall be specifically noted) to identify crash concentration locations. Crash diagrams shall be provided for the crash concentration locations. The CONSULTANT shall provide a Draft Crash Analysis Report and upon review and comment by MDOT, the CONSULTANT shall make any changes identified and submit a Final Crash Analysis Report.

The CONSULTANT shall review and analyze the most recent five years of MDOT crash data. For the analysis, the CONSULTANT shall stratify the data by location and the crash data shall also be aggregated by similar roadway segment characteristics. The CONSULTANT shall quarry SEMCOG to determine regional crash averages which will provide a normative measure of comparison to aid in the identification of crash concentration locations.

The CONSULTANT shall identify crash concentration locations and determine crash patterns. Based on the crash patterns identified for each crash concentration location the CONSULTANT shall develop proposed crash countermeasures. The countermeasures shall be graphically depicted, to scale, with sufficient detail to determine the countermeasures impact to the existing roadway and the proposed roadway improvement.

The countermeasures may range from simple sign / marking / signal modifications up through substantial reconstruction. The CONSULTANT shall present countermeasures stratified into short and long-term solutions. The CONSULTANT shall provide a construction cost estimate for each countermeasure using MDOT Pay Items and shall clearly identify any right-of-way impacts a countermeasure may have. The CONSULTANT shall provide a full cost/benefit analysis for each countermeasure. The CONSULTANT shall also evaluate the crash impacts on design exceptions sought.

Develop a Time of Return (TOR) analysis for each countermeasure using the MDOT TOR format as provided by the MDOT Region Traffic Safety Engineer.

This information shall be included in the appropriate area of the Attachment A.